NSAIDs reduce osteoarthritic knee pain in the short term; long term effects are unknown

Synopsis

Summary of Bjordal JM, Ljunggren AE, Klovning A and Slørdal L (2004): Non-steroidal anti-inflammatory drugs, including cyclo-oxygenase-2 inhibitors, in osteoarthritic knee pain: Meta-analysis of randomised placebo controlled trials. *BMJ* 329: 1317–1323. (Prepared by Gro Jamtvedt, Norwegian Health Services Research Centre and Kåre Birger Hagen, National Resource Centre in Rheumatology, Oslo, Norway.)

Question What is the analgesic effect of NSAIDs, including coxibs, in patients with knee osteoarthritis? ***Data Sources*** MEDLINE, EMBASE, and The Cochrane Controlled Trials Register (CENTRAL) from 1966 to April 2004. Reference lists from relevant articles were scanned. Relevant studies were also traced by contacting experts. ***Study selection*** Randomised controlled trials of patients whose knee osteoarthritis had been verified by clinical examination according to the American College of Rheumatology criteria and by X-ray, where the intervention groups had to have received matched placebo drug or adequate NSAID dose and the outcome measure was pain. ***Data extraction*** Methodological quality was assessed according to predefined criteria (Jadad scale). It is not reported if selection and assessment of trials were done by one or more reviewers. ***Results*** Twenty-three trials of moderate or good methodological quality were included. The included patients (n = 10 845) had a median age of 62.5 years, 67.9% were women, and the median duration of symptoms was 8.2 years. Thirteen trials used an additional inclusion criterion by requiring a predefined minimum flare of symptoms when NSAID treatment was discontinued in the pretreatment wash out period. Only one trial reported long term effects on pain but found no significant difference between NSAID and placebo at one, two, three, and four years after start of treatment. For short term effects (2–13 weeks) the pooled effect size in change in pain between the treatment and the placebo groups was 0.32 (95% CI 0.24 to 0.39), comparable to 10.1 mm on visual analogue scale (VAS) (7.4 to 12.8) or 15.6% better than placebo. For the subgroup of 10 trials (n = 4565) that did not require patients to have a minimum flare of symptoms after treatment with NSAIDs was stopped before the trial, the pooled effect size for pain was 0.23 (0.16 to 0.31) or 5.9 mm on VAS (3.8 to 7.9). ***Conclusion*** NSAIDs can reduce short term pain in osteoarthritis of the knee slightly better than placebo. Evidence of long term effects from oral NSAIDs is still lacking.

Commentary

Osteoarthritis (OA) is the most common cause of musculoskeletal disability and pain, and the prevalence is increasing with the increasing age of population. Painful joints often lead to a downward spiral of inactivity, muscle dysfunction and weight gain, increased disability and reduced participation in life activities. According to the EULAR recommendations (Jordan et al 2003), current treatment for knee OA includes non-pharmacological treatments (for example exercise and education), and pharmacological treatments (paracetamol, NSAIDs, and topical treatments). How is the current evidence to support these treatment alternatives?

The present high quality review showed that NSAIDs may have a small to moderate short-term effect on pain whereas long-term use of NSAIDs is not supported. For short-term effects (2–13 weeks) the pooled effect size in change in pain between the treatment and the placebo groups was moderate (0.32). For the subgroup of 10 trials that did not require patients to have a minimum flare of symptoms after treatment with NSAIDs was stopped before the trial, the pooled effect size for pain was small (0.23).

Recent high quality trials, systematic reviews and reports have concluded that therapeutic exercises are beneficial for patients with knee OA (Jordan et al 2003, Roddy et al 2005, Fransen et al 2002, Nasjonalt kunnskapssenter for helsetjenesten 2004). The Roddy et al (2005) review concluded that strengthening and aerobic exercise had moderate effects on pain (effect size range 0.44 to 0.70) and function (effect size range 0.37 to 0.76).

According to current evidence, therapeutic exercises are of benefit for patients with knee OA, and NSAIDs may give short-term pain reduction. The combination of these two interventions might be beneficial, administered as long-term, guided exercise programs, supplemented with short term use of NSAIDs to allow patients to start training or overcome painful periods.

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References

Fransen M, McConnell S and Bell M (2002): *J Rheumatol* 29: 1737–1745.

Jordan KM et al (2003): *Ann Rheum Dis* 62: 1145–1155.

Nasjonalt kunnskapssenter for helsetjenesten (2004): Effekt av fysioterapi ved kneleddsartrose, begrenset til elektroterapi og øvelsesbehandling. (English summary) http://www.mrw.interscience.wiley.com/cochrane/clhta/articles/41TA-20030374/frame.html

Roddy E et al (2005): *Rheumatology* 44: 67–73.